

**Abstract****IMPROVED NETWORK SERVICE PROVIDER ARCHITECTURE IN COMMUNICATIONS NETWORK**

5 An improved architecture in a circuit switched communications network is provided in which a plurality of network service provider devices, eg intelligent peripherals are arranged to provide network service data to a plurality of time division multiplex circuits and trunks by converting these circuits and trunks to streams of packets, and providing network service data packetized in a set of network service data packet streams to the circuit packet streams without  
10 incurring delays to the circuit packet streams. The circuit packet streams may be duplicated and forwarded to the network service provider devices without incurring delay to the ongoing through put packetized circuits, and similarly packet streams containing network service data may be superimposed into the circuit packet streams, without the requirement for the circuit packet streams to  
15 be switched to the network service provider devices. The architecture comprises a plurality of TDM interfaces, a plurality of conversion means for converting from time division multiplexed mode to a plurality of packet streams; a plurality of packet streams switching devices and a plurality of network service provider devices.

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